218-D1 18107

Fundamentals of Math II
Dr Matthew Sunderland

1. Synchronous lecture Monday Wednesday 10:10–12:05
   https://zoom.us/meeting/register/tJYkc-uqrzosE9UBkIRQ7svOwjLpKyIMXZhV
2. Online problem sets due Sundays
   https://www.math.csi.cuny.edu/webwork2/Math218_18188_Sunderland_F20/
   Both username and password are your CUNY username,
   eg, username first.last00 password first.last00, all lowercase (*not* jsmith5678)
3. Written assignments due some Sundays on
   https://www.gradescope.com course code 9NKJEY
4. Reading assignments due each night before lecture
   Mathematics for Elementary School Teachers With Activities 5e by Beckman (Pearson)
5. Office hours [as of 10/13] every day 12–1 and 6–7
   https://zoom.us/my/mattsunderland
6. Announcements, Lecture Recordings, and Grades posted on
   https://bbhosted.cuny.edu
7. Platform for administering exams TBD,
   possibly Blackboard, Gradescope, WeBWorK, Respondus, or Proctortrack
8. Tutoring available at
   https://www.csi.cuny.edu/students/academic-assistance/tutoring

Day 1 Homework

1. Download Zoom and create free account
2. Do Online Problem Set 1 by Sunday 8/30
3. Submit Written Assignment 1 by Sunday 8/30—see last two pages of syllabus
4. Do first reading assignment (Section 10.1) by Sunday 8/30
5. Do office hour survey https://forms.gle/RRf74atLQkR3kg5DA

Course Grade = Average of
- Coursework
  1. Lecture participation
  2. Online problem sets
  3. Written assignments
- Exam 1
- Exam 2
- Final

Lecture Recording Statement *Students who participate in this class with their camera on or use a profile image are agreeing to have their video or image recorded solely for the purpose of creating a record for students enrolled in the class to refer to, including those enrolled students who are unable to attend live. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live.*

Deadlines Add 9/1 Drop 9/15 Withdraw 11/6

Topics Reading due - **Lecture date** - Problem set due

			ungraded practice	*ungraded problems*	*ungraded activities*	
A.	10.1	Line, angle, triangle	*460/1,3,4*	*463/2,4,5*	*ca201/1–3 202/1,2*	8.30 - **8.26, 8.31** - 9.6
B.	10.2	Application	*461/5–7*	*463/9,10*	*ca203 204/1 205/3 206/4,6,7 207*	9.2 - **9.3** -
C.	10.3	Circle, sphere, GPS	*475/1,2,4*	*476/1–3*	*ca214*	9.8 - **9.9** -
D.	10.4	Polygon, venn	*484/1–4*	*487/1–3*	*ca217–222*	9.13 - **9.14** -
E.	10.4	Construction	*484/5–7*	*487/5,8,9,16,19a,20ab*	*ca223 224/4,6,7*	9.15 - **9.16** -
F.	11.1	Measurement	*503/1–4,7–9*	*504/1–7*	*ca230/1,2,4 231*	9.22 - **9.23** -
G.	11.2	Length, area, volume, dimension	*508/1–3*	*509/1,3,4,7*	*ca232*	9.22 - **9.23** -
H.	11.3	Error, precision	*513/1,2*	*513/1–3*	*ca233*	9.22 - **9.23** -
I.	11.4	Units	*518/1–4*	*521/1–6,8–11*	*ca234–5*	9.28 - **9.29** -
	11.4	Units	*518/5–7*	*521/12–14,16,17,21,25*	*ca236–7*	9.28 - **9.29** -
J.	12.3	Triangle area	*539/2,4*	*542/2,4–6,8–11,13*	*ca246–7*	10.6 - **10.7** -
K.	12.4	Polygon area	*546/1,3*	*547/2–4,6–8*	*ca248 249/12H*	10.13 - **10.14** -
L.	12.5	Cavalieri's principle	*551/1–2*	*553/1–6*	*ca250–1*	10.8 - **10.19** -
M.	12.6	Circle area	*558/1,2,4,5*	*559/1,2,6,8*	*ca252/12L 253 254/1*	10.20 - **10.21** -
N.	12.9	Pythagorean theorem	*560/1,2,3,6*	*563/1,3,6*	*ca261 262/1,4*	11.25 - **10.26** -
		Proof with similar right triangles. President James Garfield's Trapezoidal Proof.				
O.	13.1	Polyhedra	*586/1–4*	*587/2–4*	*ca265/1,2 267*	11.1 - **11.2** -
P.	13.2	Surface area	*591/7–11*	*595/3,13* (*cylinder*) *596/11,12* (*pyramid*) *596/15–17,20* (*cone*)	*ca269/13G 270*	11.3 - **11.4** -
Q.	13.3	Volume	*603/2–7*	*604/2,4,5,7,8,12,* *17*,18,22–24* (*cone*)	*ca275 277/2,3*	11.8 - **11.9** -
R.	13.4	Submerged object	*608/1–3*	*609/1–3*	*ca311/1–3*	11.8 - **11.9** -
S.	15.1	Data, sample	*679/1–4*	*680/3–5,8,9*	*ca309–310*	11.17 - **11.18** -
T.	15.2	Displaying data	*690/1–3*	*692/4,5,8*	*ca312–4*	11.17 - **11.18** -
U.	15.3	Mean, median, mode	*698/2–6*	*700/2,4,5,7–10,13,14,17,20*,21**	*ca321/1 322/2–4 323/2 325 333*	11.22 - **11.23** -
V.	16.1	Probability	*728/1,2,4*	*729/1–4,7*	*ca341/3 342/2,3*	11.29 - **11.30** -
W.	16.2	Counting outcomes	*733/1–4*	*735/2,3,5,6*	*ca346/1,3,4 357/1,2*	11.29 - **11.30** -
X.	16.3	Compound event	*739/1–3*	*741/1–8,10,12,13,16*	*ca351/16J*	12.1 - **12.2** -
Y.	16.4	Probability and fractions	*747/1,2,3**	*748/1,2,10,11*	*ca352/1 354/1,3c*	12.1 - **12.2** -

Mon		Tue		Wed		Thu	Fri
				8.26	A		
8.31	A			9.2	B		
				9.9	C		
9.14	D			9.16	E		
9.21	review			9.23	F,G,H		
		9.29	I	9.30	review		
10.5	exam			10.7	J		
				10.14	K		
10.19	L			10.21	M		
10.26	N			10.28	review		
11.2	O			11.4	P		
11.9	Q,R			11.11	review		
11.16	exam			11.18	S,T		
11.23	U						
11.30	V,W			12.2	X,Y		
12.7	review			12.9	review		

MTH/SLS 218 Syllabus

Mathematics for Elementary School Teachers

With Activities

Text: Beckman, 5th Edition, 2017, Pearson. CSI Math Department 2017. **L Blois**

Required materials include a Calculator, a Compass and a Straight Edge

Day	Section & Reading assignments in the in Text	Activities Practice Problems HW Problems
1a	10.1 Lines and Angles. Angles for intersecting and parallel lines (452)	Activities CA-201/1, 2, 3. CA-202/1, 2; **Practice (text):** 460/1, 3, 4; **HW (text):** 463/2, 4, 5
1b	10.1 Angle sum of a triangle.	Activities CA-203/1, 2, 3. CA-204/1. CA-205/3. CA-206/4, 6, 7. CA-207/1 to 4. **Practice** 461/5, 6, 7. **HW:** 463/9, 10.
2a	10.2 Angles and Phenomena in the world (466)	Activities CA-209: Calculating Earth's Circumference. **Practice** 468/1, 2 **HW:** 469/1ab, 4a-f, 5 (instructor may expand on the topic of seasons)
2b	10.3 Circles & Spheres (472)	**Practice** 475/1, 2, 4. **HW**: 476/1, 2, 3
	10.3 The Global Positioning System (GPS)	Activities CA-214. (GPS can be presented as a class demo with strings and/or with diagrams)
3a	10.4 Triangles, Quadrilaterals and other Polygons: Definitions, Relationships and Venn diagrams (477)	Activities CA-217. CA-218-219. CA-220-221. CA-222 **Practice** 484/1 to 4. **HW:** 487/1, 2, 3, 5abc, 8ab, 9, 16ab, 19a, 20ab
3b	10.6 Constructions with a compass and a straight edge	Activities CA-223/1, 2, 3. CA-224/4, 6, 7. **Practice** 484/5, 6, 7. **HW:** 487/5abc, 8ab, 9, 16ab, 19a, 20ab.
4ab	**4a Review** **4b. Test 1**	
5a	11. Measurement (492) 11.1 Concepts of Measurement (493)	Activities **CA-230/1, 2, 4. CA-231/1, 2, 3.** **Practice** 503/1 to 4, 7, 8, 9. **HW:** 504/1 to 7
	11.2 Length, Area, Volume & Dimension (505)	Activities **CA-232/1, 2.** **Practice** 508/1abc, 2, 3. **HW:** 509/1, 3, 4, 7
	11.3 Error & Precision in Measurement (510)	Activities CA-233/1ab, 2**.** **Practice** 513/1, 2. **HW:** 513/1, 2, 3
5b	11.4 Converting from One Unit of Measurement to Another I (514)	Activities CA-234/1abc, 2. CA-235/1, 2, 3. **Practice** 518/1 to 4. **HW:** 521/1 to 6, 8, 9, 10, 11
	11.4 Converting from One Unit of Measurement to Another II	Activities CA-236/1, 2. CA-237/1 to 5. CA-238/1, 2. **Practice** 518/5, 6, 7. **HW:** 521/12, 13, 14, 16, 17, 21, 25
6a	12.3 Areas of Triangles (535)	Activities **CA-246/3, 4. CA-247/1 to 4** **Practice** 539/2, 4. **HW:** 542/2, 4, 5, 6, 8, 9, 10, 11, 13
6b	12.4 Areas of Parallelograms & Other Polygons (544)	Activities **CA-248/1, 2. CA-249:12H/1, 2;**

		Practice 546/1, 3. **HW:** 547/2, 3, 4abcd, 6, 7ab, 8.
7a	12.5 Shearing: Changing Shapes without Changing Area. Cavalieri's Principle (550).	Activities **CA-250/12J. CA-251/1, 2, 3.** **Practice** 551/1, 2. **HW:** 553/1, 2ab, 3ab, 4ab, 5abc, 6
7b	12.6 Areas of Circles and the Number Pi. (554)	Activities **CA-252:12L. CA-253:12N. CA-254/1.** **Practice** 558/1, 2, 4, 5 **HW:** 559/1, 2, 6, 8
8ab	**8a. Review** **8b. Test 2**	
9a	12.9 Pythagorean Theorem; applications and proofs (570).	Activities **CA-261:12U. CA-262/1 ,4** **Practice** 560/1, 2, 3, 6 **HW:** 563/1, 3, 6.
9b	Include the proof with similar right triangles; and President James Garfield's Trapezoidal proof	
	13. Solid Shapes: Their Volume & Surface Area (580)	
	13.1 Polyhedra & Other Solid Shapes (581)	Activities **CA-265/1, 2; CA-267. Practice** 586/1 to 4. **HW:** 587/2, 3, 4.
10a	13.2 Patterns & Surface Area (589)	Activities **CA-269/13G:1, 2. CA-270/1, 2, 3, 4.** **Practice** 591/7, 8, 9, 10, 11. **HW:** Cylinder Area: 595/3ab, 13ab; Pyramid Area: 596/11, 12. 583/11, 12; Cone Area: 596/15ab, 16ab, 17, 20
10b	13.3 Volumes of Solid Shapes (597) (refer students to YouTube videos)	Activities **CA-275:13N/1, 2, 3. CA-277/2, 3.** **Practice** 603/2 to 7. **HW:** 604/2ab, 4ab, 5, 7, 8, 12ab, cone: (17*, 18ab, 22, 23ab, 24)
	13.4 Volumes of Submerged Objects (607)	Activities **CA-311/1, 2, 3.** **Practice** 608/1, 2ab, 3. **HW:** 609/1, 2, 3
11a	15. Statistics (673). 15.1 Formulating Statistical Questions, Gathering Data, Using Samples (674)	Activities **CA-309/abcde. CA-310/1, 2.** **Practice** 679/1, 2, 3, 4. **HW:** 680/3, 4, 5, 8, 9
	15.2 Displaying Data and Interpreting Data Displays (681)	Activities CA-314/1 to 6. **Practice** 690/1, 2, 3 **HW:** 692/4, 5, 8ab
11b	15.3 The Center of Data: Mean, Median, Mode (693)	Activities CA-321/1. CA-322/2, 3, 4. CA-323/2. CA-325/1, 2ab. 3. CA-333/1, 2 **Practice** 698/2, 3, 4, 5, 6. **HW:** 700/2, 4, 5, 7 to 10ab, 13, 14,abc, 17, 20*, 21*.
12a	16. Probability (722) 16.1 Basic Principles of Probability (723)	Activities **CA-341/3. CA-342/2, 3.** **Practice** 728/1, 2, 4 **HW:** 729/1, 2, 3, 4, 7
	16.2 Counting Number of Outcomes (730)	Activities **CA-346/1, 3, 4. CA-357/1, 2.** **Practice** 733/1, 2, 3, 4 **HW:** 735/2, 3ab, 5, 6abc
12b	16.3 Calculating Probabilities in Compound Events (736)	Activities **CA-351/16J:1, 2.** **Practice** 739/1abc, 2, 3 **HW:** 741/1 to 8, 10ab, 12, 13, 16ab
	16.4 Using Fraction Arithmetic to Calculate Probabilities (743)	Activities **CA-352/1. CA-354/1, 3c.** **Practice** 747/1, 2, 3* **HW:** 748/1, 2, 10, 11
13ab	**13a. Review;** **13b. Test 3**	
14ab	**14a. Review;** **14b. Review**	
15	**Final Exam**	

Written Assignment 1

Name _____ EMPLID _____

Course _____ Date _____

Directions: Upload your completed assignment to Gradescope as a PDF. For full credit, each page of your submission must be right side up and the pages must be in the correct order. If Gradescope asks you to match questions to pages, do so. Many students find it easier to type/annotate directly onto the PDF on the computer; other students prefer to print out the assignment, handwrite their answers, and then use a scanning app to get the completed assignment back onto the computer. If you scan, make sure you scan as a single PDF (with two pages) and make sure you scan as a document, not a picture (completely white background between text).

Question 1.

Is this your first math course at CSI? If not, what math course did you take before this?

Question 2.

What suggestions do you have for students to get excited about learning online?

Question 3.

Are you taking this course to satisfy a requirement? Some other reason?

Question 4.

Is there some grade in this course that you will strive to make?